

Notice of Allowability

Application No.

09/843,072

Applicant(s)

BURNETT ET AL.

Examiner

Art Unit

Samson B. Lemma

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 01/31/2007.
2. ☒ The allowed claim(s) is/are 1,2,4-14,16-21,23,24 and 26-28.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>held on 04/12/2007</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

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DETAILED ACTION

1. This is in reply to amendment, filed on January 31, 2007. **Claim 14 is amended.**
2. There **are five independent claims** namely **1, 13-14, 22-23.**
3. Applicant's representative, **Darcell Walker** (Registration No. 34,945) and Examiner discussed the limitation recited in the independent claims. It is found that the limitation recited in the respective independent claims, though produces a useful and concrete result, the recitation of the claims does not clearly establish a statutory category of the invention because it does not produce a tangible result. Furthermore the parties discussed, how the independent claims should be amended to make the claims statutory. Accordingly, both parties (Examiner and applicant's representative) agreed that if the limitation recited in the dependent claims 3, 15 and 25 are incorporated to the respective independent claims, the independent claims would not only results in practical application producing a concrete and useful result, but also produces a tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. (MPEP § 2106 IV). Accordingly, the following Examiner's amendment is done. Examiner suggested that further search, consideration and approval from the supervisor is required before determining whether or not the application is allowable.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

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Authorization for this examiner's amendment was given in a telephone interview
with **Darcell Walker** (Registration No. 34,945) on 04/12/2007.

The application has been amended as follows:

IN THE SPECIFICATION

On page 13, delete the paragraph beginning on line 19 and insert the paragraph below in place thereof:

It is important to note that while the present invention has been described in the context of a fully functioning data processing system, those skilled in the art will appreciate that the processes of the present invention are capable of being distributed in the form of instructions in a computer readable medium and a variety of other forms, regardless of the particular type of medium used to carry out the distribution. Examples of computer readable media include media such as EPROM, ROM, tape, paper, floppy disc, hard disk drive, RAM, and CD-ROMs and transmission-type of media.

IN THE CLAIMS

1. (Currently Amended) A method for controlling access to a computing system resource, being accessed through a symbolic link file, with an externally stored resource comprising the steps of:

determining a system resource named in the symbolic link through which an access attempt is made;

searching a protected objects database for entries protecting said system resource and generating a list of said entries; and

generating an authorization decision for the access attempt based on security policies that govern all entries in the protected objects database that protect the system resource, the authorization decision being generated by retrieving a current entry from said generated database list; calling an access decision component of the externally stored resource to obtain an access decision for the access attempt based on the security policy that governs the current entry in the generated database list; determining whether the access decision component granted access; if the decision component granted access, determining whether more entries are in this database list;

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and updating a current entry in said database list when more entries are in the list and returning to said current entry retrieving step.

3. (Canceled)

4. (Currently Amended) The method as described in claim 1 3 further comprising the step of denying the access attempt when the decision component denies access based on the security policy for the current database entry.

5. (Currently Amended) The method as described in claim 1 3 further comprising the step of allowing the access attempt if no more entries are in the database list.

13. (Currently Amended) A method for controlling access to a computing system device being accessed through symbolic link, said access control being implemented through an externally stored resource and comprising the steps of:

monitoring the computing system for activities related to creating and accessing symbolic links that link to system resources;

generating an authorization decision governing a symbolic link creation attempt or a symbolic link access attempt based on security policies that govern all entries in the protected objects database that protect the system resource, the authorization decision being generated by retrieving a current entry from said generated database list; calling an access decision component of the externally stored resource to obtain an access decision for the access attempt based on the security policy that governs the current entry in the generated database list; determining whether the access decision component granted access; if the decision component granted access, determining whether more entries are in this database list; and updating a current entry in said database list when more entries are in the list and returning to said current entry retrieving step;

restricting the creation of symbolic link files based on the rules defined in the externally stored resource; and

restricting accesses to system resources that are linked to and accessed by a symbolic link.

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14. (Currently amended) A computer program product stored on a computer readable storage medium for controlling access to a computing system resource, being accessed through a symbolic link file, with an externally stored resource comprising:

instructions for determining a system resource named in the symbolic link through which the access attempt is made;

instructions for searching a protected objects database for entries protecting said system resources and generating a list of said entries; and

instructions for generating an authorization decision for the access attempt based on the security policies that govern all entries in the database protecting the system resource, the authorization decision being generated by instructions retrieving a current entry from said generated database list; instructions calling an access decision component of the externally stored resource to obtain an access decision for the access attempt based on the security policy that governs the current entry in the generated database list; instructions determining whether the access decision component granted access; if the decision component granted access, instructions determining whether more entries are in this database list; and instructions updating a current entry in said database list when more entries are in the list and returning to said current entry retrieving step.

15. (Canceled)

16. (Currently Amended) The computer program product as described in claim ~~14~~ 15 further comprising instructions for denying the access attempt when the decision component denies access based on the security policy for the current database entry.

17. (Currently Amended) The computer program product as described in claim ~~14~~ 15 further comprising instructions for allowing the access attempt if no more entries in the database list.

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22. (Canceled)

23. (Currently Amended) A method for restricting the creation of a protected symbolic link that names a system resource comprising the steps of:

determining a system resource named in a proposed symbolic link;

searching a protected objects database for entries protecting said system resource named in the proposed symbolic link;

generating a list of file entries that contain the system resource named in a proposed symbolic link; and

generating an authorization decision for the access attempt based on security policies that govern all entries in the protected objects database that protect the system resource, the authorization decision being generated by retrieving a current entry from said generated database list; calling a creation decision component of the externally stored resource to obtain a decision for the symbolic link creation attempt based on the security policy that governs the current entry in the generated database list; determining whether the creation decision component allows creation of a symbolic link; if the decision component allowed creation, determining whether more entries are in this database list; updating a current entry in said database list when more entries are in the list and returning to said current entry retrieving step.

25. (Canceled)

26. (Currently Amended)) The method as described in claim 23 ~~25~~ further comprising the step of denying the creation attempt when the decision component denies the creation attempt based on the security policies that govern all entries in the database protecting the system resource.

27. (Currently Amended) The method as described in claim 23 ~~25~~ further comprising the step of allowing the symbolic link creation attempt if no more entries in the database list.

Allowable Subject Matter

As the result of Examiner's amendment,

- Dependent claim 3, 15 and 25 are canceled and are incorporated into the respective independent claims .
- Independent claim 22 are also canceled.

Thus **claims 1-2, 4-14, 16-21, 23-24 and 26-28** remain in the application.

4. **Claims 1-2, 4-14, 16-21, 23-24 and 26-28** are allowed.

5. The following is an examiner's statement of reasons for allowance:

6. Referring to **the independent claims** the art on the record, namely Tivoli, discloses each and every limitation of the claims.

For instance, referring to the pervious independent claims 1, 14 and 23,

Tivoli discloses a method for controlling access to a computing system resource, being accessed through a symbolic link file, with an externally stored resource [Page 1, paragraph 3 and 4; page 19, reference "File System Aliases"] comprising the steps of:

- Determining a system resource named in the symbolic link through which the access attempt is made; [Page 19, reference, "File System Aliases"] ("the system resource" is the "target resource" or "the underlying resources" pointed by the symbolic link as explained on page 9, 1st paragraph and page 10 of the submitted disclosure by the applicant. When a system resource or the target resource named in the symbolic link or pointed by the symbolic link is accessed or searched, access to the target resource or the system resource will be determined

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based on the authorization policy attached to the symbolic link through which the access attempt is made as explained on Page 19, reference, "File System Aliases" up to page 22, 2nd paragraph]

- Searching a protected objects database for entries protecting said system resource and generating a list of said entries; [Page 9, paragraph 4, reference "Protected Object Policies"; page 19, reference "File System Aliases" up to page 22 second paragraph] (As explained under the title "Protected Object Policies", on page 9, objects which are protected are stored in the protected objects database and access is granted based on the authorization police attached to these objects. Before access is granted the protected database is searched and the governing authorization policy is determined based on the authorization policy attached or associated to these symbolic links which are pointing to the target resource as explained on page 19, last paragraph up to page 22 second paragraph).
- Generating an authorization decision for the access attempt based on security policies that govern all entries in the database protecting the system resource. [Page 9, paragraph 4, reference "Protected Object Policies"; page 19, reference "File System Aliases" up to page 22 second paragraph] (As explained under the title "Protected Object Policies", on page 9, objects which are protected are stored in the protected objects database and access is granted based on the authorization police attached to these objects. When these database is searched the governing authorization policy is determined based on the authorization policy attached or associated to these symbolic links which are pointing to the target resource. The authorization decision for the access attempts

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is made after the security authorization policies which are attached to all entities or all symbolic links which are pointing to the target resources are checked or examined. The decision will be made accordingly after all entities or symbolic links are examined as explained on page 19, reference "File System Aliases" up to page 22 second paragraph)

Referring to the pervious independent claim 13 Tivoli discloses a

method for controlling access to a computing system device being accessed through symbolic link, said access control being implemented through an externally stored resource [Page 1, paragraph 3 and 4; page 9, reference "File System Aliases"] comprising the steps of:

- Monitoring the computing system for activities related to creating and accessing symbolic links that link to system resources; [Page 19, reference "File System Aliases"- page 22 second paragraph; page 23, reference "Trusted Computing Base Resources"; page 52, reference "TCB Monitoring"]
- Restricting the creation of symbolic link files based on the rules defined in the externally stored resource/authorization policy; [Page 1, paragraph 3 and 4; Page 15-page 17; page 9 paragraph 4; page 19, reference "File System Aliases" -page 22 second paragraph]
- Restricting accesses to system resources that are linked to and accessed by a symbolic link. [page 19, reference "File System Aliases" -page 22 second paragraph]

Referring to the pervious independent claim 22 Tivoli discloses a

computer connectable to a distributed computing system, which included symbolic links pointing to system resources and comprising:

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- A processor; [Page 53, table “30”, reference “Monitor-threads, description”]
- A native operating system; [page 2, figure 1, ref. “Native OS services”]
- Application programs; [Page 2, figure 1, ref. “PDOS”; page 74, last paragraph- page 75, first paragraph] (PDOS is an application program that is installed on each machine that is needed to be protected as explained on page 2, 1st paragraph, last line.)
- An externally stored authorization program overlaying said native operating system and augmenting the standard security controls of said native operating system; [Page 1, 3rd paragraph, under the title “understanding PDOS”]
- A protected objects database within said external authorization program containing as entries protected symbolic link files and system resources pointed to by these protected symbolic links such that the protection of the symbolic link is attached to said system resources; [Page 1, 3rd and 4th paragraph; page 2, reference “PDOS Databases”; page 9, reference “Protected Object Policies”; page 19, reference “File System Aliases” up to page 22 second paragraph]
- A decision component with said authorization program for controlling access to system resources being accessed through symbolic links; and a decision component with said authorization program for controlling the creation of symbolic links through which system resources are accessed.[Page 2, reference “PDOS DataBases” - page 3, 1st paragraph;

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Page 9, reference "Protected Object Policies"; page 19, last paragraph-
page 22 second paragraph]

- However, **Applicants traversed** the examiner's first office action and argued that Tivoli is a division of IBM, which is the same assignee of the present application. Applicant further argued that the cited reference merely documents the inventors' own invention. Further, applicant indicated that the reference only displays a copyright notice of 2000 and this fact does not indicate the exact date of the publication. In addition, applicant said that the present invention was submitted for internal review and preparation of the patent application prior to these release dates.

- **Examiner on August 17, 2005, requested (Requirement under Rule 105) the applicant so that the applicant would submit the publication date of the reference.**

Finally applicant confirmed that the record of the Assignee show a date of conception of July 18, 2000. Applicant further indicated that the internal approval process for IBM and the process of preparation and filing of the application immediately followed.

For the above reason, the "**Tivoli**" reference used as a prior art which had a copyright date of November 7, 2000 is withdrawn as the applicant indicated that **the conception date of the application is on July 18, 2000** which is before the reference date. **(November 7, 2000).**

Furthermore, the specification and the respective independent claims are further amended so that, the independent claims would not only results in practical application producing a concrete and useful result, **but also produces a tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.**

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None of the prior art of record taken singularly or in combination teaches or suggests a method for controlling access to a computing system resources, being accessed through a symbolic link files with an externally stored resource comprising the steps/limitations recited in the respective amended independent claims **1, 13-14 and 23**. For this reason, independent claims **1, 13-14 and 23** are allowed.

7. The dependent **claims** which are dependent on the above **independent claims 1, 13-14 and 23** being further limiting to the independent claim, definite and enabled by the specification are also allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samson B Lemma whose telephone number is 571-272-3806. The examiner can normally be reached on Monday-Friday (8:00 am---4: 30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BARRON JR GILBERTO can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

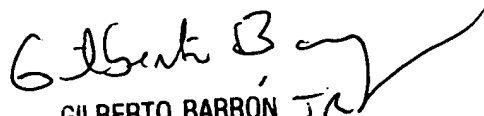
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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAMSON LEMMA

S.L.

04/12/2007


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